I. AMENDMENT

IN THE SPECIFICATION

1) Please replace the title of the application shown on page 1, line 1, with the following title:

- - ~~NUCLEASE~~ STRAND-SPECIFIC POLYNUCLEOTIDE NICKASES - -

2) Please replace the paragraph beginning at page 18, line 7, with the following rewritten paragraph (the SEQ ID NOs added by the preliminary amendment filed on March 3, 2003 are included):

- - E180Q mutant of α subunit and E177A mutant of β subunit were chosen for further experiments. Proteins were purified to near homogeneity (see Example 1) and it was shown by several different methods (see Example 2, 3) that when E180Q mutant of α subunit (αE180Q) and native β subunit are combined in the reaction mixture the only one strand with the sequence 5'-CC^TNAGC-3' is effectively nicked. *Vice versa,* the presence of native α subunit and E177A mutant of β subunit (βE177A) in the reaction mixture results in the specific nicking of the opposite DNA strand with the recognition sequence 5'-GC^TNAGG-3' (Fig. 3). The experiment was performed as follows: (ΦX174 plasmid DNA, a set of specific primers (#1:5'TGGTTATATTGACCATGC3' (SEQ ID NO:12), position 1303; #2:5'TTAAAATAGTTGTTATAGATA3' (SEQ ID NO:13), position 1411), dNTPs and $\alpha[^{33}$dATP] were used in the extension reaction with T7 DNA polymerase through unique *Bpu*10I recognition site (position 1361). After inactivation of polymerase by heating at 65°C for 15 min. labelled extension products were digested in parallel with *Bpu*10I restriction endonuclease, N.*Bpu*10Iα (α+βE177A) and N.*Bpu*10Iβ (αE180Q+β). Digestion reactions were analysed by 10% denaturing PAGE. Due to different distance from the *Bpu*10I recognition site to the primer annealing sites (60 bp and 46 bp) on the top and bottom DNA strands the cleaved strand could be specifically identified on the gel. In Figure ~~3~~ 10, lane 1 shows labelled ΦX174 DNA digested with *Bpu*10I restriction endonuclease, lane 2 shows labelled ΦX174 DNA digested with N.*Bpu*10Iα (α+βE177A), and lane 3 shows labelled ΦX174 DNA digested with N.*Bpu*10Iβ (αE180Q+β). Primers and fragments cleaved with each nickase are shown below: - -